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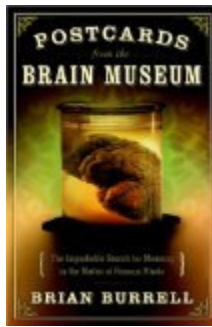
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[Review - Postcards from the Brain Museum](#)

The Improbable Search for Meaning in the Matter of Famous Minds

by Brian Burrell

Broadway, 2004

Review by Ruth Mark, Ph.D.

Aug 1st 2005 (Volume 9, Issue 31)

The central thesis of *Postcards from the Brain Museum* is an attempt to answer the question: is there such a thing as a *criminal* or indeed an *elite/genius brain*? Burrell tempts the reader in from the start with the promise of an interesting journey through the history of brain research, the added bonus of meeting famous scientists and their brains along the way.

From the outset the reader is aware that this book has been written for a lay audience. We are immediately introduced to the idea that brain collections (there is no *museum* per se) exist throughout the world and reassured that we won't need to be brain anatomists to understand the contents. Within the first few pages we are in familiar territory -- Frankenstein the book and movie are discussed. Everyone living must know this story and it is an apt one for introducing the topic here. Mystery, intrigue and not a little gristle and gore are waiting for us in these pages.

With our noses smelling the formalin and pictures of brains decomposing while the lids of their containers gather dust we are immediately plunged into the quest for a marker for genius, for criminality. This is also a cautionary tale of botched thinking, flawed experimentation, men of science on both sides of the Atlantic, how idol worship can cloud objectivity even in scientists and ultimately a path through the history of brain science from the time of the ancients (some of whom believed the heart mattered more than the brain), Descartes, to Gall and up to the present day. Religion has always been a part of this story, primarily the question of where the soul resided, or if indeed there was such a thing as a soul. Theory of Mind, materialism, the hunt for a workable paradigm, positivism, phrenology (scalp-bump reading in the early days), eugenics (breeding a master race and all that entails), cytoarchitectonics ("the mapping of the cerebral cortex based on minute differences of cell structure, density, composition, and staining quality"; pg 247) and ultimately querying whether we can match function to structure in any meaningful way are all covered here.

Topics such as how brains were acquired, how they were prepared and stored, if/when they were studied and how are also dealt with. The history of European and American Neuroscience, the setting up of specialized institutes and where the brain collections are now are also discussed. A useful index, notes and whose brains make up the various collections around the world are all included. The pictures in the middle of the book are appropriate and fascinating.

Politics and social/historical context are also crucial to understanding how the scientists worked and how the days they lived in influenced their thinking. It could be said that this is primarily a story of men in neuroscience's history (few women are mentioned and only then as supports to the men, with the exceptions of Marian Diamond and Sandra Witelson who recently investigated Einstein's brain.) To be fair though most scientists in the history of brain science were men and many of them are given short shrift here. The author questions previous authors on this topic where/when he can (Stephen Jay Gould's *The Mismeasure Of Man* especially gets a *going over* in this book.) Burrell talks about the importance of objectivity, something he isn't 100% able to do himself one feels. From the very beginning we are told: "nothing has been proven" (pg 14) and by the end of this volume this viewpoint isn't much changed.

Written in a pop-psychology style, this book is a quick read. It also makes for vagueness at times to the expense of specifics. Burrell does foreshadow well however and generally links chapters with each other via concluding paragraphs thus aiding comprehension. The pages are full of interesting anecdotes (e.g. the possibility that Walt Whitman's brain might have been dropped before it could be studied, or that Einstein's brain spent many years *on the road* before it was actually investigated in any way). Characters too are abundant -- swaggering egos, ladies' men, loners, The Wild Boy of Aveyron, notorious criminals, politicians, presidents, scientists and more are all here. Burrell is especially good at scene-setting (the introduction to the chapter headed "Lenin" was wonderfully poetic) while less good at letting the story flow. Many of the chapters are not chronologically (time-wise or subject-wise) presented. All of the chapters are titled after the principal brain/character they investigate and many of them don't introduce this person until well into the chapter. As a reader I found myself asking when the title character was going to actually *show up*...

Burrell is right to say that IQ isn't well defined/understood and that even now scientists argue over its definition. He has a point when he says that scientists can be blinded by the *name on the jar* or the *name on the paper* rather than being objective about what the data/brain/words tell us. He also gives us hope when he says that every healthy brain can be improved and that we are all essentially the same: "any healthy brain has a potential that is essentially infinite." (pg 307) I take issue however with his and Jerry Fodor's contention that psychology isn't finished and neuroscience isn't prepared to wait (see pg 293 for exact quote). That strikes me as a very empty, ridiculous statement. Burrell seems to forget that cognitive neuroscience is still a relatively young discipline despite the ground-breaking advances in technology in recent years. We're also not just twiddling at knobs using small research groups to get any data we want (Quote: "Keep the sample size small enough, say ten to twelve subjects, and the odds are encouragingly high that, with a little tweaking of the dials, there will be sufficient overlap in the localized zones to allow you to claim, with 95 percent confidence, that there is a "God spot" in the brain, a phrenological module of veneration." pg 294) (Note: he's using an example but goes on to generalize to higher-order cognitive functions like

thinking, memory etc). Where does he get this view from is what I want to know? Statements like this do no service to this area of science -- not for our relationship with the public (whoever might read this book) and not among the scientists and others involved. Global comments about higher order functions and the fact that he mentions only one study (on "musical brains") as a means to hedge his bets isn't scientific. Then again, it's questionable how much this author understands brain scanning techniques. It didn't instill me with confidence on this issue when he stated: "Adjust the dials, choose the colors, and one part of the brain will light up brighter than the rest." (pg 294) He also states: "It is hardly the case that all of contemporary brain science is a fraud." (pg 301) A statement that simply left me speechless! This is a massive field and I felt that Burrell clearly hasn't covered even 1% of it when he can make these global statements in the way he does. Despite the fact that he states: "No one today contests the localization of brain function" (pg 293) he goes on to contest this very statement. We can link function to structure to the extent that specific tasks involve specific areas of the brain in reliable ways. It's a start surely?

It is sad to think that there are rows of dusty jars full of formalin and decomposing brains which are not being studied before it is too late. Today we are more interested in *in vivo* brain function -- how the brain works while a person is performing some task in a controlled environment. Gross anatomy has become *old news*, regrettable when it is clear from this book that there appears to be a lot left to investigate. The studies so far have been inconclusive and/or unpublished/unpublishable -- either because the data has been poor, there have been few adequate control groups or because this issue has always been a political *hot potato*. Finding markers of *elite* brains will always be unpopular (especially now after the horrors of the Holocaust.)

In conclusion, despite the let-down of the last two chapters (I have to be honest and say that he lost my trust as a reader right at the end), this book is an informative one, not least on the history of neuroscience, the move from gross anatomy (weight and fissures) to cellular maps to investigating the brain *in vivo*. The author makes the case strongly that we are all essentially the same (whatever that means!) yet also individual (see page 306). History of science students and anyone working in some area of human neuroscience should be encouraged to read it. Burrell manages right at the end to stir up the hornet's nest that has always plagued this field of science. If nothing else the contents of *Postcards from the Brain Museum* will make you question, think and react in either one way or the other. In doing so he carries on the tradition of controversy that has always been the life-blood of research into the human brain.